Dissertation Research Grants for Underrepresented Minorities in the Ethical, Legal, and Social Implications (ELSI) of Genetics Research

This PA is meant to stimulate and encourage underrepresented minority doctoral candidates from a variety of academic disciplines and programs to conduct research related to the ethical, legal, and social implications (ELSI) of genetics, genomics, and gene–environment interaction research. It is hoped that this program will facilitate the entry of promising new minority investigators into the field of ELSI research.

The usual mechanisms used for the support of doctoral dissertation research have not attracted significant numbers of underrepresented minority students to the field of ELSI research. The intent of these dissertation research grants is to attract larger numbers of underrepresented minority students as ELSI investigators and to assist in providing a positive and constructive research experience that will stimulate them to pursue research careers in this field.

Applications may be made for support of research in any area relevant to the ethical, legal, or social implications of genetic and genomic research. Proposed projects can range from large clinical studies of the impact of genetic information and technologies in health care settings to smaller analytical studies of how this information affects individuals or how communities view themselves or are viewed by others.

General areas of programmatic interest are set out on the National Human Genome Research Institute (NHGRI) Division of Extramural Research Web site at http://www.nhgri.nih.gov:80/About_NHGRI/Der/Elsi/. The following five specific research goals have been developed for the NHGRI ELSI program through the year 2003 (a list of examples of research questions associated with each of these goals is available online at http://www.nhgri.nih.gov:80/98plan/elsi/): 1) examine the issues surrounding the completion of the human DNA sequence and the study of human genetic variation; 2) examine issues raised by the integration of genetic technologies and information into health care and public health activities; 3) examine issues raised by the integration of knowledge about genomics and gene–environment interactions into nonclinical settings; 4) explore ways in which new genetic knowledge may interact with a variety of philosophical, theological, and ethical perspectives; and 5) explore how the social environment, including socioeconomic factors, age, gender, and concepts of race and ethnicity, influences the use, understanding, and interpretation of genetic information, the utilization of genetic services, and the development of policy.

Each of the sponsoring institutes has a particular interest in ELSI research relevant to its own mission. The NIEHS is particularly interested in understanding the impact of environmental exposures on human health and disease. The NIEHS expanded its research program on genetic susceptibility to environmentally associated diseases through the Environmental Genome Project. Understanding genetic susceptibility to environmental agents will allow more precise identification of the environmental agents that cause disease and the true risks of exposures. This can lead to more effective disease prevention and improved public health. Further information on the Environmental Genome Project can be found at http://www.niehs.nih.gov/envgenom/home.htm.

The applicant must be a full-time student in good standing enrolled in an accredited doctoral degree program in a relevant social science or humanities discipline, such as anthropology, economics, health policy, public health, history, philosophy, political science, psychology, religious studies, or sociology. The applicant must be conducting or intending to conduct research in one of the areas described in this PA. The applicant must have obtained approval of the dissertation proposal by the dissertation committee by the time of application. All requirements for the doctoral degree other than the dissertation (and clinical internship, if applicable) must also be completed by the time of application. The applicant's eligibility must be verified in a letter of certification from the mentor (the chair of the dissertation committee or other academic advisor) and submitted with the grant application.

Priority will be given to applicants who belong to ethnic or racial groups that are currently underrepresented in ELSI research. Within these groups, persons with disabilities are particularly encouraged to apply. Academic institutions are encouraged to facilitate applications from qualified applicants.

This PA will use the NIH small grant (R03) award mechanism. Applicants will be solely responsible for planning, directing, and executing the proposed project. Grants to support dissertation research will provide no more than $25,000 (one module) in direct costs. An application that exceeds this limit will be returned to the applicant without review. Grants are normally awarded for 12 months, but may be extended without additional funds for up to a total of 24 months. More information on this PA is available online at http://grants.nih.gov/grants/guide/pa-files/PA-02-048.html.

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Cancer Therapy–Related Use of Genetically Engineered Mice

The goal of this National Cancer Institute (NCI) PA is to encourage the use of genetically engineered mouse cancer models for cancer therapy–related goals. Mouse cancer-prone models with heritable genetic alterations are usually derived to explore mechanisms that underlie basic cancer or tumor biology. Through in-depth phenotyping, these models are often discovered to have molecular genetic profiles and histopathology that are similar to the molecular signatures and tumor progression of human malignancies. Because of the similarities, the models may be appropriate to identify molecular targets for therapy or to test new molecularly targeted agents. The models may be credentialed with new agents through systematic preclinical trials to discover how well the mice mimic either the clinical course of human cancer in response to therapy or the development of resistance in response to therapy. The model strains may also be used to discover the genetic determinants of response to therapeutic agents.

This PA is intended to encourage those who develop genetically engineered mice (GEMs) for studies of tumor biology to delineate how appropriate they are for cancer therapy–related research, and to define the practical limitations to use of GEMs for preclinical therapy research. Where advisable, the applicants to this PA should include collaborators who are expert in fields such as translational research, clinical trials, imaging research, and statistical analysis. Applicants are also encouraged to consider subcontracts with companies that can provide relevant services that are unavailable at their institutions.

The following are examples of topics that are responsive to this PA; however, appropriate subjects are not limited to the following: 1) preclinical trials of appropriate agents in relevant GEMs to determine if the timing and penetrance of the tumor phenotype limits the value of the model for this use; 2) preclinical trials to credential appropriate GEMs for how well they reflect the observed clinical course of human cancers; 3) appropriate experiments to determine the pharmacodynamics and pharmacokinetics of specific agents in GEMs; 4) preclinical trials that incorporate use of high-throughput technologies or small-animal imaging to monitor delivery of agents or response to therapy; 5) preclinical trials to determine efficacy of new single or multiple agents at different stages of tumor progression; 6) preclinical trials that examine which aspects of trial design are appropriate for experiments with GEMs; and 7) examination of GEMs and their corresponding normal background strains for genetic determinants of therapeutic response.

This PA will use the NIH R01 award mechanism. Applicants will be solely responsible for planning, directing, and executing the proposed project. Applications must be prepared using the PHS 398 research grant application instructions and forms, available at http://grants.nih.gov/grants/funding/phs398/phs398.html in an interactive format. The deadline for receipt of applications is 19 April 2002. Further information on this PA is available online at http://grants.nih.gov/grants/guide/pa-files/PAR-02-051.html.

Contact: Cheryl L. Marks, Division of Cancer Biology, NCI, Executive Plaza North, Room 5000, Bethesda, MD 20892-7380 USA, 301-594-8778, fax: 301-496-8656, e-mail: cm74v@nih.gov. Reference: PA No. PAR-02-051

Airborne Particulate Matter Health Effects: Cardiovascular Mechanisms

The U.S. Environmental Protection Agency (EPA) invites research grant applications to conduct studies

on the role of particulate matter (PM) air pollution in cardiovascular illness and mortality. A potentially important role of PM has been suggested by epidemiology studies showing increased cardiopulmonary-related mortality and hospital admissions for cardiovascular disease associated with increases in exposure to PM. The objective of this program is to encourage *in vitro* and *in vivo* research in laboratory animals and humans on the specific cellular, molecular, and physiologic mechanisms by which ambient air PM, alone or in combination with gaseous copollutants, mediates adverse cardiovascular effects. A subobjective is to encourage involvement of cardiovascular experts in research efforts to address the adverse health effects associated with PM exposure. Areas of research that would be considered responsive to the RFA include the following:

1) *Mechanisms of pathogenesis: humans and/or laboratory animals: In vitro* and *in vivo* research to develop and evaluate novel hypotheses addressing specific mechanisms by which PM may affect the cardiovascular system. These could include, but are not limited to, factors affecting the electrical activity of the heart or processes that damage cardiac cells, cause endothelial cell dysfunction, or cause alterations in blood viscosity or clotting. Proposals that address these issues in an integrated manner applying both cellular and molecular approaches in either laboratory animals or humans are encouraged.

2) *Models of susceptibility:* Epidemiology studies suggest that elderly people with cardiovascular disease are particularly susceptible to the effects of PM. Therefore, proposals are encouraged that use animal models of cardiovascular disease to study the effects of PM, especially newer genetic models that target specific cellular pathways. Specific aims should include studies elucidating the underlying mechanism of PM effects in these models. If development of a new animal model is proposed, the proposal should include plans to disseminate the model and willingness to share the model with the scientific community.

3) *Controlled exposure studies in humans or animals:* These studies may demonstrate whether and how inhaled PM directly affects the heart (e.g., through uptake of particles into the circulatory system or through release of soluble substances into the circulatory system); whether and how PM affects autonomic control of the heart and cardiovascular system; or whether and how lung inflammation caused by PM exposure leads to cardiovascular-related morbidity (e.g., lung inflammation and cytokine production cause adverse systemic hemodynamic effects, lung inflammation from inhaled PM causes increased blood coagulability, and lung injury from inhaled PM causes impairment of oxygenation in individuals with cardiac disease).

Proposals with a primary emphasis on the pulmonary effects of PM rather than on how pulmonary factors interact with the cardiovascular system will not be considered responsive. Particles that are not considered environmentally relevant or that are not generally found in the air in urban areas should not be proposed for study, nor should particles generally encountered primarily in occupational settings. Applications proposing to study the effects of silica or asbestos will not be considered.

It is anticipated that a total of approximately $5 million, including direct and indirect costs, will be awarded, depending on the availability of funds. Proposals may request funding for projects with a total cost up to $350,000/year with a duration of up to 3 years.

The deadline for final applications is 30 April 2002. A set of special instructions on how applicants should apply for a National Center for Environmental Research (NCER) grant is found on the NCER Web site located at http://es.epa.gov/ncer/rfa/forms/downlf.html under "Standard Instructions for STAR Grants." The necessary forms for submitting an application will be found on this Web site. Complete information on this announcement is available online at http://es.epa.gov/ncer/rfa/02pmcardio.html.

Contact: Stacey Katz, 202-564-8201, e-mail: katz.stacey@epa.gov; Gail Robarge, 202-564-8301, e-mail: robarge.gail@epa.gov. E-mail inquiries are preferred. Reference: 2002-STAR-G1

Valuation of Environmental Impacts on Children's Health

The U.S. Environmental Protection Agency (EPA) Office of Research and Development, National Center for Environmental Research (NCER), in cooperation with the EPA Office of Children's Health Protection, announces the third year of an extramural grants competition supporting research leading to improved valuation of reducing environmental risks to children's health.

The EPA has supported similar socioeconomic research in prior years through the EPA/National Science Foundation joint program on Decision-Making and Valuation for Environmental Policy, and through the 2000 and 2001 Valuation of Environmental Impacts on Children's Health solicitations. The competition encourages proposals from researchers from all behavioral, social, and economic sciences. It encourages collaborations with non–social science disciplines when needed to answer important social science questions. It will support research conducted within a single disciplinary tradition, and encourages novel, collaborative, and interdisciplinary scientific efforts.

To promote research that would enhance economic valuation of reducing environmental risks to children's health, the EPA requests applications for research funding to identify willingness to pay (WTP) for reductions in morbidity and mortality risks to children's health. All proposals should clearly identify the environmental stressors and resulting health effects that will be investigated, as well as the attributes of children (as children and as future adults) that are altered by those effects. Examples of such attributes include intelligence, fertility, functionality, mobility, and life expectancy. Emphasis should be on development of empirical research and data.

This year's Valuation of Environmental Impacts on Children's Health solicitation requests proposals addressing both acute and chronic threats to children's health. The EPA invites development of WTP estimates for a variety of health end points including 1) childhood cancers, 2) incidence of food- or waterborne pathogenic illnesses, 3) developmental disorders, 4) respiratory illnesses, and 5) diseases, both fatal and nonfatal, that may manifest in adulthood as a result of childhood exposure to toxicants or pathogens. Proposals should clearly identify where outcomes are specific to certain health end points, as well as where they are specific to the robustness of results with respect to different health end points.

Research proposals should address one or both of the following objectives: 1) development of methods to measure the value of reducing morbidity and mortality risks to children's health using either established or novel techniques; and/or 2) development of empirical estimates of the value of reducing a specific risk or set of related risks. Applicants are encouraged to submit proposals that achieve more than one of these objectives and involve experts from economics and other disciplines.

Examples of related research questions include 1) what is the value for reducing fatal risks to children, and how does it compare to a similar value for adults; 2) what is the value of lost school or recreational days, reduced intelligence, or other measures of avoided child morbidity; 3) what are the roles of age, dependency, ongoing development, and future potential of children in affecting how valuation of potential long-term effects is derived; 4) what is the role of family structure (e.g., presence or absence of, or number of, children in household) on the valuation of children's health; 5) what is the role of altruism—particularly to unrelated children—in how society values reductions in children's health risks; and 6) how should the intergenerational aspects of risks imposed by the current generation on future generation(s) be addressed.

The results of this research are expected to inform federal and state policy makers in both executive and legislative capacities, as well as members of regulated communities, the academic community, and public interest groups, all of whom will be stakeholders and participants in the debate on uses of children's health valuation results.

The EPA anticipates making approximately 4–8 awards totaling about $1–2 million. The projected range is $50,000–200,000 per award per year, with durations of 1–3 years. Field experiments, survey research, and multi-investigator projects may justify the higher funding level. Awards made through this competition will depend on the availability of funds. Requests for amounts in excess of a total of $400,000 will not be considered.

The deadline for receipt of applications is 8 May 2002. Complete information on this announcement is available online at http://es.epa.gov/ncer/rfa/02childrenval.html. A set of special instructions on how applicants should apply for an NCER grant is found on the NCER Web site at http://es.epa.gov/ncer/rfa/forms/downlf.html.

Contact: Matthew Clark, EPA, NCER, 202-564-6842, fax: 202-565-2447, e-mail: clark.matthew@epa.gov. E-mail inquiries are preferred. Reference: 2002-STAR-F1 for Valuation of Children's Health